

Tev RF Phase Noise Measurements Store # 3532

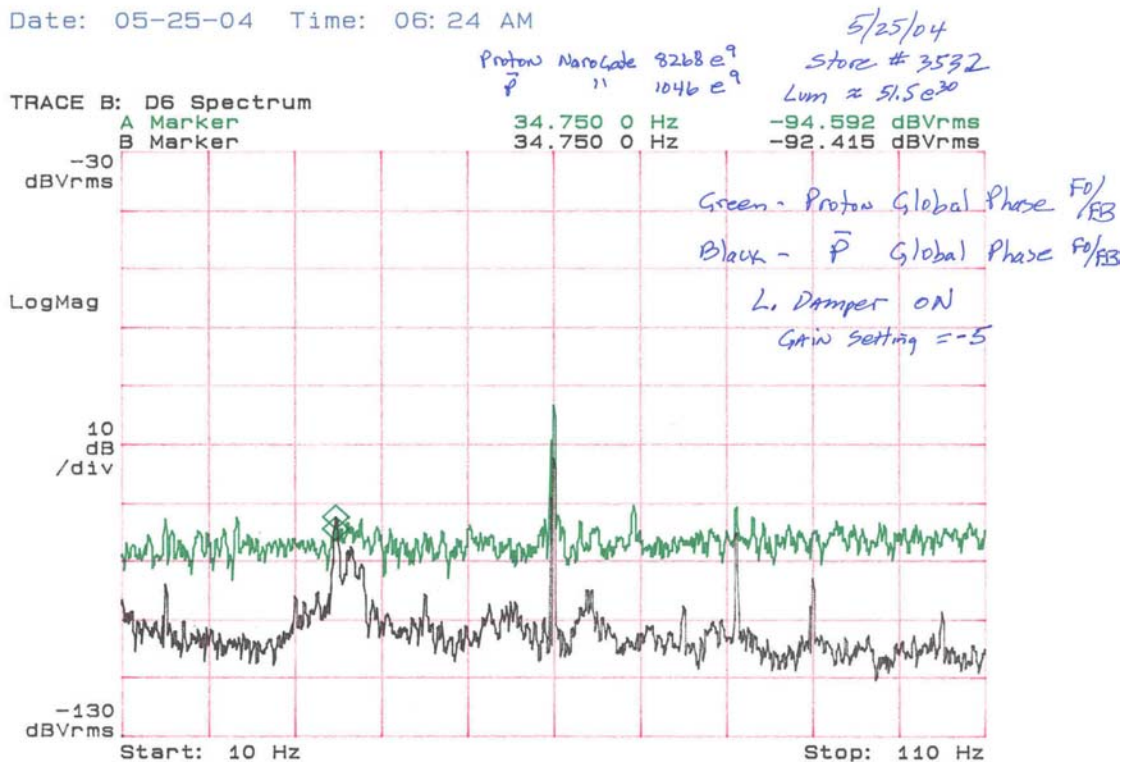
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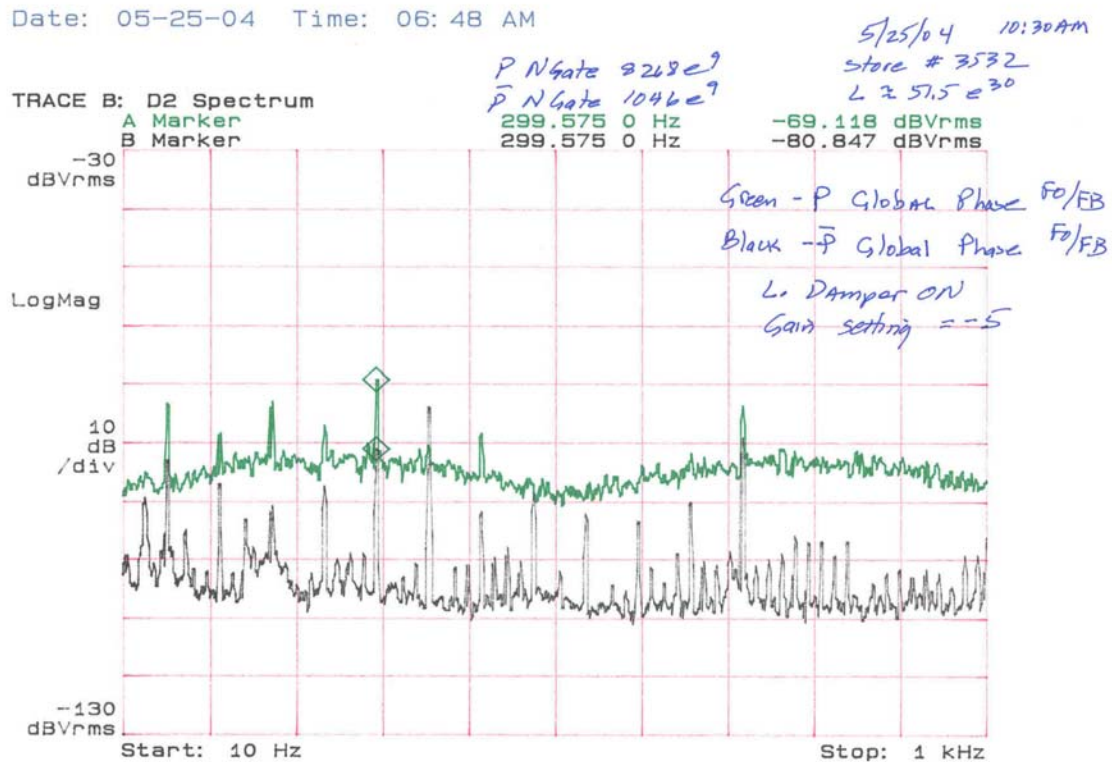
The following plots delineate the proton and pbar phase noise in the high level rf system, using fast phase detectors between the global Fanout/Fanback rf signals for each set of 4 cavities (proton & pbar). It should be noted that only the proton rf stations receive an input from the longitudinal damper which accounts for the differences in phase noise between the two systems. It has been shown that if the longitudinal damper is turned off, the two rf systems have the same noise levels.

Calibration of the phase detector is 9 degrees per volt.

For plot below with the longitudinal damper "ON" and gain at -5, the 34.75Hz proton phase noise is 2.93 uRadians and pbar phase noise is 3.77 uRadians. These values are slightly better than the data taken on 1-6-03 when it was ~ 5.25 u Radians for both protons and pbars.



The plot below shows the phase noise spectrum over a wider frequency range (to 1 KHz). This is with the longitudinal damper "ON" with a gain setting of -5. The highest peak occurs at 300 Hz and corresponds to 55.7 uRadians for protons and 14.3 uRadians for pbars.



This plot shows the response of the T:PGPN & T:APGPN which is run thru a low frequency bandpass filter (20 to 50 Hz).

